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ABSTRACT

Aiming to provide a coherent and useful guide to practitioners, this paper presents highlights of discussions held at a seminar that focused on how to create powerful reading programs for all of California's students. The paper also provides an extensive summary of key findings of research, a description of effective classroom and school practices, and recommendations for professional development and resource utilization. The paper presents the following research highlights addressed in the seminar: (1) phonemic awareness is the most potent predictor of success in learning to read and is the most important factor separating normal and disabled readers; (2) factors that contribute directly to reading ability are letter knowledge, linguistic awareness of words, syllables, and phonemes, and knowledge about print; and (3) good comprehension instruction should include ample time for text reading, teacher-directed instruction in comprehension, and opportunities for discussing what students have read. The paper then presents 10 detailed descriptions of effective classroom practices for early literacy programs, seven practices for upper elementary instruction, and five practices suitable for all grades. Implications for professional development addressed in the paper include: effective beginning teacher programs start during the undergraduate years, provide practical experience, and contain course work on cognitive research and language theory; and effective inservice education includes current theory and research, provides training in phonemic awareness assessment and instruction, conveys dynamic methods to teach phonics, and assists teacher to effectively implement balanced literacy programs. The paper concludes with recommendations for use of state discretionary money. Contains 34 references. (RS)

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Building A Powerful Reading Program From Research to Practice

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Introduction

In the Fall of 1995, California issued a report from the Reading Task Force appointed by State Superintendent of Public Instruction Delaine Eastin. The Task Force Report called for balance in the way reading is taught; the Task Force emphasized the importance of a comprehensive approach to reading that includes both direct skill instruction and the activities and strategies most often associated with effective whole language classrooms.

On February 29, 1996, The California Education Policy Seminar and the California State University Institute for Education Reform sponsored a seminar that focused on how to create powerful reading programs for all of California's students. More than 50 participants listened and responded to presentations by three outstanding practitioner/researchers in the field of reading. The presentations addressed three points:

- **the latest and best research on how children learn to read**
- **effective practices for educators based on the research**
- **implications for professional development and resource utilization**

Hallie Yopp, Professor, Department of Elementary and Bilingual Education, California State University, Fullerton, focused on pre-school and kindergarten issues. Marilyn Adams, Ph. D., Senior Scientist, Bolt Beranek and Newman, Inc., spoke about the beginning reading program for early elementary grades, and David Pearson, Professor of Education at Michigan State University, discussed comprehension skills for the upper grades. All three emphasized the importance of basing instruction on research. Respondent Gerald Treadway, Professor of Education at California State University, San Diego, also pointed out the importance of having a systematic and research-based approach to instruction aimed at giving students control as they learn to read. Such a systematic approach has two critical elements:

- teaching the **system of language**
- **linking** instruction in a **logical, sequenced progression** throughout the grades

The presenters stressed that this systematic approach should not be a return to dull drills and rote learning in classrooms devoid of engaging literature "but rather be part of a broader language-rich program consistent with the best practices of whole language and the California Language Arts Framework", and finally, that teacher education should include an "understanding of how the English language system works, how students learn to read, and state-of-the-art best practices in both skill development and whole language activities."

Seminar attendees consisted of college and university faculty, school administrators and teachers, and others in the field of education, as well as staff to California legislators, State Board members, and representatives of the governor's office and state agencies.

In order to present a coherent and useful guide to practitioners, this document presents not only the highlights of the seminar discussions, but also provides a more extensive summary of the key findings of research, a description of effective classroom and school practices, and recommendations for professional development and resource utilization.

Recommendations for the Field

Because of the convergence of research and best practice, it is now abundantly clear what it will take to enable children to become skilled readers. All successful early reading programs must:

- base instruction on accurate diagnostic information
- develop print concepts
- develop knowledge of letter names and shapes
- convey the understanding that spoken words are composed of sounds (phonemic awareness) and that letters correspond to these sounds
- provide systematic and explicit instruction in sound/ symbol relationships (phonics)
- connect that instruction to practice in highly decodable text that contains the sounds and symbols taught
- make use of rich and varied literature and read to children regularly

In addition, direct instruction and practice comprehending the meaning of text must start early and build through the grades. Instruction in the upper grades must extend and build upon the skills developed earlier. All of these skills must be taught as part of a comprehensive approach that includes varied and abundant printed materials, active learning, and the development of written and spoken language through highly engaging activities.

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Research Highlights

Hallie Kay Yopp, Ph.D, Professor, Department of Elementary and Bilingual Education, California State University, Fullerton

Professor Yopp addresses the critical role of phonemic awareness in the early stages of reading acquisition. She defines phonemic awareness as "the awareness that phonemes exist as abstractable and manipulable components of spoken language. It is the ability to reflect on speech and experiment (play) with its smallest components (phonemes). Phonemic awareness is **not** phonics and **not** auditory discrimination."

The research outlines a progression of phonemic awareness development in pre-school, kindergarten, and early first grade that includes the ability:

- to hear rhymes or alliteration
- to blend sounds to make a word (e.g., /a/-/t/ = at)
- to count phonemes in words (how many sounds do you hear in "is"?)
- to identify the beginning, middle, and final sounds in words
- to substitute one phoneme for another (e.g., change the /h/ in "hot" to /p/)
- to delete phonemes from words (e.g., omit the /c/ from "cat")

Key Research Findings About Phonemic Awareness:

- **Research has identified phonemic awareness as the most potent predictor of success in learning to read.** It is more highly related to reading than tests of general intelligence, reading readiness, and listening comprehension (Stanovich, 1986,1994).
- **The lack of phonemic awareness** is the most powerful determinant of the likelihood of failure to learn to read because of its importance in learning the English alphabetic system or how print represents spoken words. If children cannot hear and manipulate the sounds in spoken words, they have an extremely difficult time learning how to map those sounds to letters and letter patterns -- the essence of decoding. (Adams, 1990).
- **It is the most important core and causal factor** separating normal and disabled readers (Adams, 1990).
- **It is central in learning to read and spell** (Ehri, 1984).

Phonemic awareness can be developed in children by providing them with rich language experiences that encourage active exploration and manipulation of sounds. These activities lead to significant gains in subsequent reading and spelling performance. Most children will learn basic phonemic awareness from these activities. Some children need more extensive assistance. Children should be diagnosed mid kindergarten to see if they are adequately progressing, and if not, given more intensive phonemic awareness experiences. For all children, the more complex phonemic awareness abilities are learned in the context of learning letter/sound correspondences.

A close relationship exists between a child's control over sounds and his reading ability. Some quick test instruments that reliably assess development of phonemic awareness in about five minutes include the Rosner, the Yopp-Singer tests, and the Roswell-Chall.

In numerous studies, correlations between a kindergarten test of phonemic awareness and performance in reading years later are extremely high. Thus, phonemic awareness has been identified by researchers in replicated studies in many countries as a very potent predictor of success in reading and spelling achievement. In fact, Professor Yopp indicates that such high correlations remain even after controlling for intelligence and socio-economic status.

Marilyn Adams, Ph.d., Senior Scientist, Bolt Beranek and Newman, Inc.

Dr. Adams focuses on the need for children to develop automatic *word recognition* and the system to achieve this. Dr. Adams supports Dr. Yopp's conclusion that training in phonemic awareness is the foundation for learning to recognize words. Such training is necessary because most children enter kindergarten without the conscious awareness that words are made up of distinct sounds; rather they hear words as complete units. Dr. Adams discusses the value of whole language in encouraging flexible class organization, the use of quality literature, and the emphasis on early writing. However, she faults the methodology of whole language for operating under the mistaken assumption that skillful readers "skip, skim, and guess" instead of reading what's on the page.

Extensive eye movement research replicated by brain scans shows that skillful readers move their eyes from left to right, are "meticulously respectful of the words, and irrepressibly translate print to speech as they read line by line." The goal of reading instruction is to make the process of reading words effortless and automatic so that the mind can be free to reflect on meaning. In order to do this children must have "detailed knowledge of words, of how they are spelled, and of how they map onto speech." Both whole language and some conventional phonics programs are faulted for not teaching that speech can be broken down into sound (phonemic awareness) and for not providing detailed knowledge of the language system.

Research shows that IQ, mental age, perceptual styles, handedness, race, or parents' education are all weak predictors of reading success.

The factors that contribute directly to reading ability are:

- letter knowledge
- linguistic awareness of words, syllables, and phonemes
- knowledge about print.

After phonemic awareness, the best predictor of first grade reading is a child' s ability to recognize letters.

Dr. Adams emphasizes the importance of organized phonics instruction because it allows children to use the system of language rather than to guess. Research indicates that a direct and organized way of acquainting children with the major components of our alphabetic system is more effective than an indirect approach which lacks precision, order, and clarity. While some children will intuitively figure out the system, many will learn faster and better by receiving organized and explicit instruction. In addition to direct instruction, Dr. Adams states that students must be able to practice what they have been taught in decodable text mostly comprised of words that contain the sounds/symbols being taught. Dr. Adams' study of the research has shown clearly that students who do not develop basic phonemic awareness, letter recognition, and the ability to decode words quickly will have difficulty learning to read. Many of these children end up identified as dyslexic and require special education.

A major series of research studies directed by G. Reid Lyon of the National Institute of Child, Health, and

Human Development (NICHD) in Bethesda, Maryland and others confirms this. These studies looked at the features that predispose children to having reading disabilities. The major problem appears to be phonological processing.

Three areas of phonological processing difficulty predispose children to reading disabilities:

- a lack of phonemic awareness
- difficulty with lexical access, or the ability to rapidly name pictures, colors, and objects
- deficits in phonological memory, which is the ability to hold lexical units in memory and then to operate on those units (e.g., repeat a string of numbers, or follow a set of oral directions)

For these students, without systematic and explicit instruction in the code system, reading becomes a probabilistic guessing game. The NICHD studies identify the best strategies to use with these children.

The following three strategies need to be in place for all successful interventions:

- explicit work to help children understand the sound structure of the language at the phonemic level
- intensive and explicit work in sound/symbol associations, ranging from thirty minutes a day, five days a week to one hour at a time in a 1:1 tutorial
- explicit application to connected text with controlled vocabulary

Furthermore, the NICHD research indicates that interventions must begin early. Research shows that if schools delay intervention until age seven for children experiencing difficulty, 75 percent will continue having difficulties. Professor Foorman of the University of Houston finds that dyslexic problems, if caught in first or second grade, may be remedied 82 percent of the time. Those caught in third to fifth grades may be improved 46 percent of the time, while those identified later may only be treated successfully 10-15 percent of the time. Robert Slavin's effective reading program, *Success For All,* which focuses on early intervention, has actually reduced special education populations more than 25 percent in schools using his approach.

In addition to organized phonics, Dr. Adams talks about the value of invented spelling because it serves as an excellent diagnostic tool and it engages children in the sounds of words. Professor Adams and others encourage this practice as a way for children to begin to express their ideas unconstrained by their limited orthographic knowledge. Adams (1990) points out that students who have ample experience with invented spelling improve in both reading fluency and spelling. She goes on, however, to indicate that direct instruction in word analysis and consonant blending is a necessary adjunct to children's spelling development. Furthermore, Professor Adams and others (Woloshyn and Pressley) urge an organized spelling program starting around the middle to late first grade as a productive and often neglected strategy to help children learn to read.

Unlike the old phonics programs of the past which relied heavily on drill and rote memorization, Professor Adams and others, notably Stanford University Education Professor Robert Calfee, cite the importance of making decoding and spelling instruction active. Calfee encourages "word work," 10-20

minutes of daily word play during which small groups of students construct words. Such interactive lessons treat students as "budding cryptographers" and problem solvers and integrate decoding with spelling (Calfee and Moran, 1993).

Finally, Professor Adams indicates that in addition to the skills for decoding, children need to explore the language of books, hear texts read aloud, and read a large number of books.

David Pearson, Ph. D., Professor, Michigan State University

David Pearson focuses on the need to systematically develop students' comprehension skills. His comments are directed at helping students with text meaning, which requires teaching students to be good thinkers when they read by instructing them in metacognitional strategies, providing opportunities for in depth discussions, encouraging extensive authentic reading and writing activities, and immersing them in literature. Professor Pearson finds that in many classrooms, students spend little time actually reading texts. Much of their instructional time is spent on workbook-type assignments. The skill/ time ratio is typically the highest for children of the lowest reading ability (Allington, 1983). Furthermore, the research indicates that teachers are spending inadequate amounts of time on direct comprehension instruction. A study completed in 1979 (Durkin) concluded that teachers used either workbooks or textbook questions to determine a student's understanding of content, but rarely taught students "how to comprehend." In 1987, Dr. Pearson (and Dole) described the importance of "explicit instruction" for teaching comprehension. Such instruction involves four phases:

- teacher modeling and explanation
- guided practice during which teachers "guide" students to assume greater responsibility for task completion
- independent practice accompanied by feedback
- application of the strategies in real reading situations

Dr. Pearson emphasizes that comprehension instruction must be embedded in texts rather than taught in isolation through workbook pages.

Dr. Pearson describes what good comprehension instruction should include:

- **ample time for text reading** in order to have regular practice, acquire new knowledge and concepts, and build vocabulary
- **teacher-directed instruction in comprehension that includes both modeling and guided practice** of such strategies as summarizing, predicting, and using the structural elements of text
- **opportunities for discussing what's read with the teacher and peers to enable** students to learn to defend opinions based on their readings, thus deepening their understanding of the texts and their ability to use a whole range of responses from literal to critical and evaluative

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Recommendations for Schools and Classrooms

Given the extensive research into effective reading practices, schools will need all of the components described below to have comprehensive, balanced programs.

Early Literacy Program

1. Beginning in pre-school and continuing through the primary grades, schools must include language activities that develop listening and expressive skills. Such activities include:

- listening to stories, poems and expository text
- telling and retelling stories and nursery rhymes
- singing and chanting (including the alphabet song)
- discussing word meanings, ideas, books and experiences
- making predictions about words and stories

These activities develop understanding of vocabulary, syntax, and story structure in all children. They are especially important for English language learners and for children who do not come from homes where literacy is nurtured.

2. Schools must build activities which teach children concepts about print and foster a love of reading. Children should be read to daily, using books with predictable patterns, repetition, and rhyme. The classroom needs to be full of print that is varied and meaningful to the children. This includes:

- labeling children's cubbies and work areas
- listing birthdays, chores, and daily activities
- teaching page arrangement, directionality and story structure through repeated readings and repetitive texts (big books are especially useful for these purposes)
- noting words that begin or end with the same sound, words with the same pattern, and punctuation cues
- Sharing wonderful stories and informational literature
- creating and posting student-generated stories

These activities support developing readers.

3. Starting in pre-school and continuing in kindergarten, phonemic awareness should be developed in linguistically-rich environments where children are encouraged to play with the sounds of language through developmentally appropriate activities. Phonemic awareness may include:

- a general awareness (that some words are longer than others, for example)
- rhyming
- blending
- segmentation
    - initial sound
    - final sound
    - medial sound

Activities that capitalize on children's natural curiosity and sense of playfulness would include (Yopp):

- sharing books that play with language
- reading and reciting nursery rhymes
- singing songs that play with sounds
- engaging in games that encourage word play
- sharing riddles and rhymes that focus on songs
- activities that allow for phoneme substitution

All of the activities above start through oral development. Children "hear" the words and see pictures of the objects (e.g. a milk bottle, a top, a man, a cup). These activities should be dynamic, not done through drills and rote memorization.

4. Schools should assess students' phonemic awareness development and should intensify experiences for students who are not progressing.

- Begin assessment in mid-kindergarten
- Build phonemic awareness activities into instruction in letters and sounds

Research has shown that about twenty minutes a day, three to four times a week, will result in dramatic improvement for students who need further development in phonemic awareness. Both formal and informal assessments should be conducted that will allow teachers to assess which phonemic insights need continued development in order to help students progress in decoding. Again, the school needs to have in place intensified intervention in phonemic awareness for any student in the primary grades who has not developed this ability.

5. Starting in pre-school and kindergarten, schools should help students learn the names and shapes of letters. Schools should make use of various fun strategies to familiarize children with the names of the letters thus giving them a "peg to which their visual perceptions can be attached" (Adams). Instruction in recognizing the shape that matches the letter name takes "time and practice and takes careful visual attention" (Adams). Research suggests important points to consider when teaching the alphabet:

- teach upper and lower case letters separately
- begin with upper case letters in pre-school (However, since the ability to read lower case letters is more important for reading text, it may be wiser to emphasize the lower case letters when working with first graders with little letter knowledge.)
- incorporate printing into instruction in letters as a powerful means of developing letter recognition
- use letter/keyword/picture displays when introducing lettersound instruction (Marilyn Adams)

By learning letter names through playful and engaging repetition, students may be protected from confusing the sound of a letter with its name.

6. In late kindergarten and early first grade, schools must provide organized and systematic phonics instruction that is based on diagnostic information. Many children enter school with lots of prior print experience. For these children, the content of the phonics lessons will consist more of review and clarification than of new information, and sound/symbol lessons may proceed quite rapidly. Other children, however, enter school with little prior print knowledge and will require more instruction. For these children, sufficient and repeated practice spread over time will be essential, along with frequent opportunities for evaluation. Instruction should be based on the following critical points:

- Students must learn that the symbols of the alphabet are worth learning and discriminating because

each stands for at least one of the sounds that occur in spoken words (the alphabetic principle).
- Phonics instruction must be explicit and should include instruction in blending letter sounds.
- Explicit phonics provides children with the real relationships between letters and sounds, or at least the approximations of them (Juel).
- Teachers need to provide instruction in word attack skills, including sounding out, syllabication, recognizing common letter patterns and generating alternative pronunciations that will enable children to start to read beginning materials independently.

- Students need ample opportunities to practice in books they can read independently, and teachers need to reinforce phonics instruction as they share literature with students.

Without the right skills, children will over-rely on context rather than visually store words and letter patterns that will lead to automatic word recognition. Adams points out that a solid base of letter/sound correspondence knowledge supported by, rather than relying on, context will enable students to sound out and then identify any written word that is in their listening vocabulary (Adams).

- The best instruction provides a strong relationship between what the children learn in phonics and the stories they read. There should be a "high proportion of the words in the earliest selections children read that conform to the phonics that they have already been taught" *(Becoming a Nation of Readers)*. These selections also need enough high-frequency words so that the texts sound natural.
- Reading predictable texts to children may help them develop syntactic awareness, semantic knowledge and vocabulary; however, predictable (when they are not decodable using grapho-phonic cues) texts do not support children's growing understanding of the alphabetic principles of English.
- The best practice combines immersing children in rich language by reading to them and providing access to a variety of texts, while explicitly and systematically teaching them the sounds and their symbols and connecting these to decodable texts.

Phonics instruction need not be tedious. Instead, activities which promote play with words in hands-on ways will contribute to children's growing understanding of the sound/symbol system. **When children are able to decode automatically, they can concentrate on the meaning of text.**

7. Although a formal spelling program need not begin until late first grade, schools should encourage and accept invented spelling as soon as children begin to write spontaneously. Invented spelling is a diagnostic tool that provides a window on children's developing knowledge of speech sounds and orthography and frees children to experiment with print. Research has shown that writing can precede and support reading. Students should be given regular opportunities to express themselves on paper. Below are some examples of early writing activities:

- writing captions and stories for drawings
- creating lists
- writing notes and cards
- recording observations

Direct spelling instruction is also necessary. Recent research has shown that children progress faster in both spelling and reading if they are taught how to analyze speech sounds in words and taught how to spell them by using sound/symbol correspondence. Moreover, Adams points out that "the process of

copying new words strengthens students' memory for those words and does so rather enduringly" (Whittlesea, 1987).

8. A daily writing program beginning in kindergarten (for those who already have the necessary fine motor control) and in first grade is essential to help children learn phonics.

- Encoding the sound/symbol correspondences in both directed and free writing sessions provides practice for the children and information for the teacher about how much each child knows about these correspondences.
- Opportunities to write stories, letters, and reports, as well as instruction in mechanics, grammar and usage, should all be part of the writing program. Further, student-authored books contribute positively to a classroom library.

9. Schools should consider a number of different grouping strategies to reduce the span of skills so that instruction can be efficient and effective, and to avoid a lock-step curriculum that is too easy for some and too difficult for others. Some flexible grouping practices include:

- skills-organized groups
- every six to eight weeks based on assessment reconstituting primary grades into mixed-age classes, each with a specified curriculum for ninety minutes a day
- organizing (and reorganizing after assessment) five to six groups within the first grade based on what children are learning

10. Because of the critical nature of reading, sufficient time must be set aside for instruction. In kindergarten, it is recommended that at least one third of the day be devoted to language arts activities. In the early primary grades, at least two to three hours should be spent on language arts activities, including reading, writing, oral language and spelling. Language arts activities in general and reading in particular can and should also be linked to other areas of the curriculum.

Upper Elementary

1. Instruction in writing continues through the grades.

- Children should have opportunities to practice the process of writing as well as to fine-tune and edit writing. Writing instruction needs to develop fluency as well as correctness.
- Children should learn complex sentence structure, paragraphing, organization, and more advanced grammar and usage both directly and indirectly through daily writing that encourages them to write across the curriculum.
- Children should be writing for a variety of purposes and to a variety of audiences.

2. It is important to encourage oral reports, debates, and group discussions so that children continue to develop their oral skills. Learning to take turns and respond to questions should be part of this oral skill development.

3. Spelling lessons that are based on diagnostic information continue to be important.

- For those children who continue to struggle with the sound-symbol system, spelling lists organized by sound themes remain critical.
- In addition, irregular words, homonyms and high-utility morphemes should be taught.

- Research suggests that immediate self-correction of tests is critical to progress in spelling.

4. Decoding skills should continue through the elementary school years as needed. Students should be taught more advanced skills, including how to make use of complex letter/sound correspondences, word roots, prefixes and suffixes, and syllabication.

5. Vocabulary development continues through extensive reading opportunities, during oral discussions and explanations, and through strategies such as synonym building and semantic trees.

6. Advanced strategic reading skills such as summarizing, predicting, questioning, and visualizing should be modeled and directly taught in the context of reading varied materials. This presupposes regular time for reading and discussion in groups as well as independently.

7. Activities to foster "deep discussions" about books should be built into the school day. Such discussions should focus on important questions and extend and deepen children's understanding of texts.

All Grades

1. Parents should be enlisted to support the development of their child's reading skills by:

- reading to their child
- listening to their child read
- discussing what has been read

This home-school connection should be supported by schools and teachers through regular communications with parents about classroom activities and expectations. Materials should be sent home for parents to read with their children.

2. Because ongoing assessment is a critical part of successful reading programs, children who need more intense instruction should be identified beginning in mid-kindergarten. For these children, tutors should be made available on a daily basis. Children who transfer in to a school should be immediately assessed and provided tutoring assistance if the need is warranted.

3. Classrooms need a variety of appropriate books to meet the needs of children at many different reading levels.

- Children must read material in which they can recognize at least 90% of the words if their reading time is to be effective.
- On the other hand, if they are reading books in which they recognize 98 to 100% of the words, they are not going to progress.

4. Students should be given ample opportunity to read in order to put their skills to use. Children should be reading twenty-five to thirty-five grade-appropriate books each year from accepted fiction and non fiction lists. Teachers should:

- conference regularly with children
- engage in in-depth discussions
- introduce children to a variety of genres

- ☐ require reading in different subject areas
- ☐ provide guided reading sessions
- ☐ read to children regularly

5. Flexible grouping should be used throughout the grades to ensure children are acquiring the skills they need.

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Implications for Professional Development: Preservice and Inservice

Teaching reading is a complex activity. Teachers must be equipped with the necessary practical skills and underlying linguistic understandings in order to have a repertoire of techniques that will enable all children to learn to read. So much has been learned about reading and literacy recently that both preservice educators and those already teaching will need up-to-date information on best practices. The key to improving literacy instruction in California is professional development and teacher preparation.

Marilyn Adams and Hallie Yopp both cite the need for teachers to have diagnostic-based professional training that includes a serious examination of language, literacy, and cognitive development. Professor Treadway reiterates this position, adding that good materials must also be available to support instruction, and that teachers need enough theory to be able to use the materials well. Preparation should include:

- an understanding of how the mind works
- information about how people use language
- knowledge about the English linguistic system
- diagnostic and research information

Beginning Teachers

Given the body of information to be learned and the practical experience to gain, many are now calling for five-year programs in teacher education, with reading and literacy preparation beginning prior to the fifth year. Beginning teachers need practical experience student teaching and observing in classrooms taught by veterans identified as effective teachers of literacy. These apprenticeships should be joined to a seminar that provides the research base and diagnostic information to reinforce what teachers are seeing and doing with children and which can serve as a vehicle for collegial learning and problem solving.

The linguistic system itself is a complex topic that will require in-depth preparation. Louisa Cook Moats, director of Teacher Training at the Greenwood Institute in Putney, Vermont and Adjunct Assistant Professor of Clinical Psychiatry at Dartmouth Medical School, talks about the importance of teachers **understanding the phonological structure of words** since so much research now points to the importance of phonemic awareness as a predictor of a child's reading success. In addition, she calls for instruction to beginning teachers in **the morphemic structure of words** since poor readers and spellers have limited structural awareness. Furthermore, she cites the lack of understanding many teachers have of the **basic alphabetic system and the importance of "code-based instruction" for beginning and problem readers.**

Informed teachers will be able to present linguistic concepts accurately and be better able to assess a student's stage of reading and spelling development. Such knowledge provides a solid foundation on which to base instructional practice.

Others in the field of teacher education stress the importance of clinical instruction for teachers in training. Professor John Shefelbine at California State University, Sacramento, has trained master teachers and then places his student teachers with those masters to work directly with students. By regularly reflecting upon and discussing the students' development, pre-service teachers are able to gain practical insights into the way children learn to read.

Because so much reading instruction will require teachers to diagnose students and group them for specific instruction, teacher education must arm teachers-in-training with a repertoire of effective diagnostic tools and with an understanding of how to manage a classroom in which students will be working at different levels in small groups.

Effective Beginning Teacher Programs:

- ☐ start during the undergraduate years
- ☐ provide practical experience teaching and observing in highly effective classrooms
- ☐ include a seminar that provides the research base and diagnostic information and serves as a forum for discussion
- ☐ contain course work that includes cognitive research, language theory and the background of the English linguistic system

Inservice Education

Many veteran teachers may not have been able to keep current with the growing body of research into reading. In addition, many new teachers have entered the profession without the background described above. Thus, inservice education needs to address the same topics and information as that of preservice education. Inservice professional development should include:

- ☐ **enough theory and up-to-date research to provide teachers with the rationale for specific instructional changes in the ways they currently teach reading;**
- ☐ **important topics about which we have new and clear information:**
  - ☐ **training in understanding phonemic awareness and ways to teach it**
  - ☐ **phonics instruction that is dynamic, systematic, and reinforced through connected text**
  - ☐ **instruction in teaching spelling**
  - ☐ **instruction in the use of appropriate diagnostic tools**

The training should be presented through workshops which include demonstrations, practice with children, and opportunities for discussion and problem solving.

Effective Inservice Education:

- ☐ includes current theory and research
- ☐ provides training in phonemic awareness assessment and instruction
- ☐ conveys dynamic methods to teach phonics and make use of connected text
- ☐ demonstrates effective ways to teach spelling that will reinforce reading
- ☐ includes a diagnostic toolkit that will enable teachers to teach what children need
- ☐ includes whole language strategies and powerful uses of literature
- ☐ provides practice with children in a clinical setting with ample opportunity for feedback and support
- ☐ assists teachers to effectively implement balanced literacy programs

Such workshop training should be supported at the school sites by regular staff discussions about the research as well as about implementation issues. Furthermore, school staff should extend their

knowledge by conducting case studies on individual students and/or controlled group studies to assess their own and the school's progress over time. Teachers will need school-based support through coaching and feedback as well as time to observe in classrooms where teachers are highly effective in teaching children to read.

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Recommendations for the Use of State Discretionary Dollars

California may have a unique opportunity to invest additional resources to strengthen reading instruction; the economy shows signs of a rebound, some discretionary money for schools has been included in the Governor's Proposed 1996-97 Budget, and the public is concerned about student reading scores and reading instruction. If resources are available, they should be spent to make a difference in early reading instruction.

The following recommendations emerged from the seminar:

Special state resources should be used to:

1. Provide additional resources for intensive inservice education across the state, emphasizing the high utility topics which may have been missing in recent years and which provide a more complete approach to early literacy:
   - ☐ phonemic awareness information and ways to teach it,
   - ☐ dynamic and systematic methods to teach phonics with practice in connected text,
   - ☐ ways to teach spelling that will support and develop reading,
   - ☐ powerful strategies to build comprehension,
   - ☐ proven diagnostic tools to monitor student progress.

2. Provide funds to school districts to ensure that all schools are able to select texts from the new adoption and have a supply of books for independent reading at various levels, including decodable texts for beginners. The supply should be sufficient to allow beginning readers access to decodable books to take home, as well as to provide all children with "beneath-frustration level" books. This will ensure that students have ample books to read, and that "connected text" books are available to allow beginning readers to practice in a systematic way the sounds and symbols they are learning.

3. Fund full-day preschool programs with a focus on literacy for all educationally disadvantaged children, and replace the current half-day kindergarten program in the most heavily endangered schools with full day kindergartens. Studies show that children in disadvantaged areas can excel in reading if provided effective early literacy instruction. Currently, many of these programs operate only part of the day. Full-day programs emphasizing early literacy would represent an investment in prevention that would pay for itself by greatly decreasing referrals to special education and by reducing the need for more costly interventions later.

4. Establish an evaluation process that will start one year after implementation of a comprehensive approach to literacy that includes both systematic and explicit skill instruction, as well as language-rich instructional activities. This approach would support the recommendation of the Superintendent's Reading Task Force. Such a comprehensive approach would be linked to intensive preservice and inservice education in the proven practices and information described in recommendation 1 above.

5. Provide funding to reduce class size in the primary grades and to provide an array of effective diagnostic tools.

6. Make good use of technology by investing in the most current and effective technological tools that can assist reading instruction. The resources section of this paper lists software packages that have been proven to build phonemic awareness and letter/sound skills.

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